

PCT10



RAW SEQUENCE LISTING DATE: 09/09/2002 PATENT APPLICATION: US/10/069,772 TIME: 15:57:07

Input Set : A:\069772sl

```
4 <110> APPLICANT: Feussner, Ivo
              Hornung, Ellen
      6
              Fritsche, Kathrin
              Peitzsch, Nicola
     9 <120> TITLE OF INVENTION: Fatty acid desaturase gene from plants
     11 <130> FILE REFERENCE: 0050/50669
C--> 13 <140> CURRENT APPLICATION NUMBER: US/10/069,772
C--> 15 <141> CURRENT FILING DATE: 2002-05-09
     15 <150> PRIOR APPLICATION NUMBER: PCT/EP/00/08222
     16 <151> PRIOR FILING DATE: 2000-08-23
     18 <160> NUMBER OF SEQ ID NOS: 2
     21 <170> SOFTWARE: WordPerfect version 6.1
    24 <210> SEQ ID NO: 1
    25 <211> LENGTH: 1285
    26 <212> TYPE: DNA
    27 <213> ORGANISM: Calendula officinalis
    29 <220> FEATURE:
    30 <221> NAME/KEY: CDS
    31 <222> LOCATION: (42)..(1175)
    33 <400> SEQUENCE: 1
    35 aaaageteae ttetetgtga gggtaattat atateaacaa e atg ggt get ggt ggt 56
    36
                                                      Met Gly Ala Gly Gly
    37
    39 cgg atg tcg gat cca tct gag gga aaa aac atc ctt gaa cgt gtg cca
                                                                           104
    40 Arg Met Ser Asp Pro Ser Glu Gly Lys Asn Ile Leu Glu Arg Val Pro
                         10
                                             15
    43 gtc gat cca ccg ttc acg tta agc gat ctg aag aaa gcg att cct acc
                                                                           152
    44 Val Asp Pro Pro Phe Thr Leu Ser Asp Leu Lys Lys Ala Ile Pro Thr
                    25
                                         30
    47 cat tgc ttt gag cga tct gtc atc cgg tca tca tac tat qtt qtt cat
                                                                           200
    48 His Cys Phe Glu Arg Ser Val Ile Arg Ser Ser Tyr Tyr Val Val His
    49
                40
                                     45
                                                         50
    51 gat ctc att gtt gcc tat gtc ttc tac tac ctt gca aac acg tat atc
                                                                           248
    52 Asp Leu Ile Val Ala Tyr Val Phe Tyr Tyr Leu Ala Asn Thr Tyr Ile
                                 60
    55 cct ctt att cct aca cct ctg gct tac cta gca tgg ccc gtt tac tgg
                                                                           296
    56 Pro Leu Ile Pro Thr Pro Leu Ala Tyr Leu Ala Trp Pro Val Tyr Trp
    57 70
                            75
                                                 80
    59 ttt tgt caa gct agc atc ctc acc ggc ctc tgg gtc atc ggt cac gaa
                                                                           344
    60 Phe Cys Gln Ala Ser Ile Leu Thr Gly Leu Trp Val Ile Gly His Glu
    63 tgt ggt cac cat gca ttt agc gac tac cag ttg att gat gac att gtt
                                                                           392
    64 Cys Gly His His Ala Phe Ser Asp Tyr Gln Leu Ile Asp Asp Ile Val
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Input Set : A:\069772s1

~ -				105					110					115			
65				105					110					115			4.4.0
				ctc		-	_				_						440
	GTA	Phe		Leu	His	ser	Ala		Leu	Thr	Pro	тyr		ser	Trp	ràs	
69			120					125					130				
				agg													488
	Tyr	Ser	His	Arg	Asn	His		Ala	Asn	Thr	Asn		Leu	Asp	Asn	Asp	
73		135					140					145					
				att													536
76	Glu	Val	Tyr	Ile	Pro	Lys	Arg	Lys	Ser	Lys	Val	Lys	Ile	Tyr	Ser	Lys	
77	150					155					160					165	
				aat													584
80	Leu	Leu	Asn	Asn	Pro	Pro	Gly	Arg	Val	Phe	Thr	Leu	Val	Phe	Arg	Leu	
81					170					175					180		
83	act	tta	gga	ttt	ccg	tta	tac	ctc	tta	act	aat	atc	tcg	ggc	aag	aaa	632
84	Thr	Leu	Gly	Phe	Pro	Leu	Tyr	Leu	Leu	Thr	Asn	Ile	Ser	Gly	Lys	Lys	
85				185					190					195			
87	tac	ggg	agg	ttt	gcc	aac	cac	ttt	gat	CCC	atg	agt	cca	att	ttc	aac	680
88	Tyr	Gly	Arg	Phe	Ala	Asn	His	Phe	Asp	Pro	Met	Ser	Pro	Ile	Phe	Asn	
89	_	_	200					205	_				210				
91	gat	cgt	gaa	cgc	gtt	caa	gtt	ttg	cta	tcc	gat	ttc	ggt	ctt	ctc	gct	728
	_	_	-	Arg	-		-				-					-	
93	_	215		-			220				_	225	_				
95	qta	ttt	tat	gca	atc	aaq	ctt	ctt	gta	qca	gca	aaa	qqq	qca	qct	tgg	776
	-			Ála		_			_	-	-			-		-	
	230		-			235					240	-	-			245	
99	qta	atc	aac	atq	tac	qca	att	cca	gta	cta	ggt	qta	agc	gtg	ttc	ttc	824
	-			_		-			_			_	-			e Phe	
101					250					255	_				260		
		tto	ato	aca	tat	tto	cac	cac	acc	cat	cto	tca	a cto	cct	cat	tat	872
	-	_				-										s Tyr	
105				265	-				270					275		-	
		. tca	aco			aac	: taa	ato			acc	: tta	a tca			gat	920
																Asp	
109			280					285		1			290				
		gat			tto	cto	aat			t.t.c	cac	· σac	: att	aca	cac	act	968
		-				-			_			-	_			Thr	
113	_	295		1			300					305					
				cat	cat	tta			tac	att	сса			cat	gga	aag	1016
		_	-			_									_	Lys	2.
	310		. 1100		1111	315			-1-		320		, -1-	. ,		325	
			аσσ	r dat	aca			cca	ata	tta			t tac	· tat		atc	1064
																Ile	7003
121		1110		, 115p	330		. Ly	110	, , , ,	335	_	010	1 -	1 -	340		
		ago	r act	. cca				aca	ato			αac	r act	. aan		tgc	1112
																Cys	1116
125	_	, ATA	1 1117	345		- F116	. пур	та	350	_	тту	GIL	· VIC	оду 355		. cys	
		+ + - ~				~a+	ma.	· ~=+								tgg	1160
																Trp	TT00
		туг			PIC	изр	GIU			GIU	nıs	гуy			. Pile	ırb	
129			360	1				365	1				370	١.			

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Input Set : A:\069772s1

132	2 Tyr His Lys Met													1215			
133	375 gttgttaaac tttctattcc gtgtaataaa ttatcattaa gagaaaaaaa aaaaaaaaaa														1275		
	_	aaaa			uccoo yeylaalaaa claccaclaa yayadaadaa adddddddd												1285
				ои о	2												1205
				H: 3													
		2> T															
					Cal	endu.	la o	ffic	inal	is							
				NCE:													
148	Met	Gly	Ala	Gly	Gly	Arg	Met	Ser	Asp	Pro	Ser	Glu	Gly	Lys	Asn	Ile	
149					5					10					15		
	Leu	Glu	Arg	Val	Pro	Val	Asp	Pro		Phe	Thr	Leu	Ser	Asp	Leu	Lys	
152		_	_	20	_				25			_		30			
	Lys	Ala		Pro	Thr	Hìs	Cys		Glu	Arg	Ser	Val		Arg	Ser	Ser	
155	_	_	35		1	_	_	40	1		_		45	_	_	_	
	Tyr	_	Val	Val	His	Asp		He	Val	Ala	Tyr		Phe	Tyr	Tyr	Leu	
158		50	m1	m	т1.	D	55	-1 -		ml	D	60	. 1 .	m	. .		
			Thr	Tyr	тте		Leu	шe	Pro	Thr		Leu	АТа	Tyr	Leu		
161			17.01	m	m-n	70	Crra	C1n	A 1 a	Com	75	Lou	mh w	Gly	т о	80	
164	пр	PIO	Val	тăт	11 p	Pile	Cys	GIII	Ald	90	шe	ьец	THI	GIY	ьеи 95	ттр	
	Va 1	Tla	Clv	Uic		Cvc	C117	uic	Uic		Dho	Sor	λan	Tyr		LOU	
167	Val	116	GIY	100	Giu	Cys	СТУ	птэ	105	ALG	FILE	261	кър	110	GIII	пец	
	Tle	Asp	Asp		٧al	Glv	Phe	Va l		His	Ser	Δla	Len	Leu	Thr	Pro	
170			115		,	J_1		120	Dou		001		125	Dou		110	
	Tvr	Phe		grr	Lvs	Tvr	Ser		Arq	Asn	His	His		Asn	Thr	Asn	
173	-	130		•	•	-	135		•			140					
175	Ser	Leu	Asp	Asn	Asp	Glu	Va1	Tyr	Ile	Pro	Lys	Arg	Lys	Ser	Lys	Val	
176	145					150		-			155		_			160	
178	Lys	Ile	Tyr	Ser	Lys	Leu	Leu	Asn	Asn	Pro	Pro	Gly	Arg	Val	Phe	Thr	
179					165					170					175		
	Leu	Val	Phe	Arg	Leu	Thr	Leu	Gly	Phe	Pro	Leu	Tyr	Leu	Leu	Thr	Asn	
182				180					185					190			
	Ile	Ser		Lys	Lys	\mathtt{Tyr}	Gly	_	Phe	Ala	Asn	His		Asp	Pro	Met	
185	_	_	195	_1	_	_	_	200	_				205	_	_	_	
	ser		He	Phe	Asn	Asp	_	Glu	Arg	Val	Gln		Leu	Leu	Ser	Asp	
188	nl	210	.	.	-1-	**- 1	215	·		~1.	.	220	_	**- 1			
		GTÀ	Leu	Leu	Ата		Pne	туг	Ala	rre		Leu	Leu	Val	Ala		
	225	C1**	712	7.1 2	m mn	230	т10	Nan	Mot	m	235	Tlo	Dwo	3703	T 011	240	
194	пуs	GTA	нта	Ата	245	Val	116	ASII	Mec	250	АІА	116	PIO	Val	255	СТУ	
	Va 1	Sar	Val	Dhe		Val	T.611	Tla	Thr		T.DII	Hic	Wie	Thr		Lan	
197	, 41	DCI	, u .	260	1 116	, u i	Deu	116	265	- 1 -	⊂u	1113	1113	270	1113	Leu	
	Ser	Leu	Pro		Tvr	Asp	Ser	Thr		Tro	Asn	Tro	Ile	Lys	G] v	Ala	
200			275		-1-	r		280					285	-1-	1		
	Leu	Ser		Ile	Asp	Arq	Asp		Gly	Phe	Leu	Asn	_	Val	Phe	His	
203		290			-	,	295		- 4			300	ر -			•	
205	Asp	Val	Thr	His	Thr	His	Val	Leu	His	His	Leu	Ile	Ser	Tyr	Ile	Pro	

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206	305					310					315					320	
208	His	Tyr	His	Ala	Lys	Glu	Ala	Arg	Asp	Ala	Ile	Lys	Pro	Val	Leu	Gly	
209					325					330					335		
211	Glu	Tyr	Tyr	Lys	Ile	Asp	Arg	Thr	Pro	Ile	Phe	Lys	Ala	Met	Tyr	Arg	
212				340					345					350			
214	Glu	Ala	Lys	Glu	Cys	Ile	Tyr	Ile	Glu	Pro	Asp	Glu	Asp	Ser	Glu	His	
215			355					360					365				
217	Lys	Gly	Val	Phe	Trp	Tyr	His	Lys	Met								
218		370					375										

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/069,772

DATE: 09/09/2002 TIME: 15:57:08

Input Set : A:\069772s1

Output Set: N:\CRF3\09092002\J069772.raw

 ${\tt L:13\ M:270\ C:\ Current\ Application\ Number\ differs,\ Replaced\ Current\ Application\ Number}$

L:15 M:271 C: Current Filing Date differs, Replaced Current Filing Date